Artificial, In-vitro or Cultured? : A Conceptual Analysis of Meat from Cell-Cultures

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Abstract

Global livestock production contributes to several large-scale environmental challenges, such as climate change, eutrophication of waterways, soil depletion, loss of biodiversity, land use change and depletion of fresh water resources. In addition, it contributes to unhealthy diets and zoonosis risks, as well as poor animal well-being and ethical issues in the meat production. Unsustainable farmed animal production has brought up discussions about post animal bioeconomy, a new form of economy and a novel food production system utilising biotechnology to produce animal products without animals in order to feed a growing population sustainably, safely and cheaply.

Post animal bioeconomy incorporates a novel food-production sector called cellular agriculture, which is defined as the usage of cell-culturing technologies for food production. Produced goods are cellular products (e.g. cultured meat, leather and fur) made of cells and acellular products (e.g. milk and chicken egg proteins) made by cells. One of the promising cellular product categories is cultured meat or meat produced without animals. As the products are still under development and not available in the marketplace, several concepts are used to describe these new meat products (e.g. artificial, in-vitro, lab-grown, test-tube, petri-dish, good, pure, clean, cultivated, cell-based, cultured, etc. meat). Although these concepts are treated as synonyms, there are variations of how they are used and what the terms actually communicate.

This abstract is based on work in-process. Our purpose is to 1) identify the central concepts utilised to describe cultured meat, 2) construct a timeline presenting when the key terms were introduced in the literature, and 3) create a conceptual typology by interpreting the meanings of cell-based meat concepts.

Research materials consist of a convenient sample of research articles addressing cultured meat from the 1990s to 2018. We will use the descriptive conceptual analysis method, which proceeds by identifying the most used concepts regarding cultured meat and pinpointing their appearance in the scientific publications. In addition, we will analyse how the usage of the terms has changed in time and what kind of meanings are assigned to the concepts that describe meat produced with the means of cellular agriculture.

Our results will be descriptive and categorise most used concepts. The results show when the terms were introduced in the research and what the perspectives are when cultured meat or equivalent terms are used. “Meat” is typically described as something “real” and “original”, but the terms added in front of the word – epithets – always point at some other added meanings. Analysis of meanings reveals how novel products are labelled or categorised in advance and how subtle lingual practices shape concepts that describe these novelties of the future. Our analysis suggests that differences in definitions are not just trivial semantics, but reflect perceptions on what the products of cellular agriculture can be and how people should react to the novel products of cellular agriculture.

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